

**REMARKS**

Claims 34-38 and 41-57, including independent claim 34 is currently pending in the present application. Independent claim 34, for instance, is directed to a package comprising a paper product and a packaging material that encloses the paper product so that a headspace is defined therebetween. The package also contains metal modified nanoparticles having an effective particle diameter of less than about 500 nanometers. The nanoparticles are formed from silica, alumina, or a combination thereof. The metal modified nanoparticles are configured to neutralize gaseous or odorous compounds within the headspace. As a result of the claimed invention, odors and other undesired gases may be removed from the headspace of, for instance, bathroom tissue and paper towel products.

In the Office Action, independent claim 34 was rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,740,406 to Hu, et al. in view of RE 32957 to Elias. Hu, et al. is directed to activated carbon particles coated with a material containing a binding agent and a masking agent (e.g., pigment or dye) that provides opacity and optionally color to the material. Hu, et al. provides a lengthy list of various possible masking agents that may be employed. Within this list, Hu, et al. briefly mentions that inorganic pigments may be used that are “extracted from earths, fossils, marble or other volcanic and sedimentary rocks in the form of silicates, carbonates, oxides, sulfides, and the salt of various metals, such as iron.” (Col. 2, ll. 23-26). The Office Action relies upon this lone citation of “metals” for the teaching of “metal modified” nanoparticles as required by claim 34.

Despite the Office Action's assertion, however, Hu, et al. simply does not disclose nanoparticles "modified" with a metal as required by the present claims. In one embodiment of the present invention, for instance, a metal ion is "adsorbed" onto the nanoparticles due to differences in electric potential. In another embodiment, the metal is bonded to the nanoparticles to form a "coordinate" and/or "covalent bond." In stark contrast, Hu, et al. simply describes an inorganic pigment that can be extracted in the form of a salt.

Nevertheless, independent claim 34 has been amended to even further distinguish it from Hu, et al. More specifically, claim 34 now requires that the nanoparticles are formed from silica (e.g., silica nanoparticles such as those available from Nissan Chemical under the designation SNOWTEX), alumina (e.g., alumina nanoparticles such as those available from Nissan Chemical under the designation ALUMINASOL), or a combination thereof (e.g., alumina-coated silica nanoparticles such as those available from Nissan Chemical under the designation SNOWTEX-AK). Such nanoparticles may be modified with a metal, such as copper, silver, gold, iron (II), iron (III), manganese, or a combination thereof. Although Hu, et al. does cursorily mention that minerals, such as silica, may be employed as a masking agent, they are used only as a coating for the particles of Hu, et al. Notably, however, the "particles" of Hu, et al. are formed from "activated carbon" and not silica, alumina, or a combination thereof as required by independent claim 34.

Even if a silica "masking agent" is somehow considered to satisfy the "nanoparticle" limitation of independent claim 34, the resulting particles would still lack certain features of independent claim 34. For example, although Hu, et al. may

describe the use of an inorganic pigment (optionally in the form of a salt of a metal) as a masking agent, there is no teaching whatsoever in Hu, et al. to modify one masking agent (e.g., silica) with a completely different masking agent (e.g., salt of a metal) in an attempt to achieve the limitations of independent claim 34. Any such combination stems only from a hindsight review of the teachings of the present application, which is improper under an analysis under § 103. Thus, for at least the reasons set forth above, Applicants respectfully submit that independent claim 34 patentably defines over Hu, et al.<sup>1</sup>

Thus, for at least the reasons set forth above, it is believed that the present application is in complete condition for allowance and, therefore, request favorable reconsideration and allowance. However, Examiner Aughenbaugh is invited and encouraged to telephone the undersigned, should any issues remain after consideration of this Amendment.

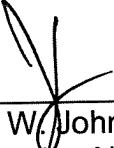
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<sup>1</sup> As noted above, Elias was cited in combination with Hu, et al. for the teaching of a “packaging material that encloses a paper product and that defines a headspace therebetween.” Even if combined, however, Elias fails to cure any of the defects of Hu, et al. noted herein.

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Respectfully requested,  
DORITY & MANNING, P.A.



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